

REMARKS

The Office Action mailed May 10, 2011 presents the examination of claims 93-110, claims 111-118 being withdrawn presently as directed to non-elected subject matter. The method claims 111-118 are retained in the present application in expectation of rejoinder upon finding of allowable subject matter in the examined claims 93-110. MPEP § 821.04.

Claims 93 and 108 are amended to incorporate the recitations of claims 95 and 96, which are accordingly canceled.

Claim 107 is amended to recite an alkali silicate.

Rejection under 35 USC § 112, first paragraph

Claim 107 is rejected under 35 USC § 112, first paragraph, for alleged lack of adequate written description support by the specification. In particular, the Examiner asserts that only alkali silicates (*i.e.* IA silicates) are shown in the specification as used to make copper silicates (or indeed the other transition metal silicates).

Claim 107 is amended herein to recite that alkali silicates are used to make the copper silicates of the invention, thus obviating this rejection.

Rejections under 35 USC § 112, second paragraph

Claims 97-102 are rejected under 35 USC § 112, second paragraph, as allegedly being indefinite. Claims 97 and 98 are rejected as lacking antecedent basis for recitations of “the cupric silicate” due to incorrect dependency. The amendment to claim 93 herein addresses this problem and obviates this rejection.

The Examiner also questions whether claims 97 and 98 are intended to be in the form of a Markush group, and thus separately further defines each cupric silicate recited, or if all of the cupric silicates recited are to be present together in the composition recited in these claims.

Applicants intend for the language of claims 97 and 98 to further define each cupric silicate individually, and note that the language of amended claim 93 from which claims 97 and 98 depend allows for the presence of any of the cupric silicates i) to iv) individually, or in any combination of two or more of them. Applicants submit that the language of claims 97 and 98 is clear when read together with claim 93 from which these claims depend.

Rejection under 35 USC § 102

Claims 93, 94, 99, 100, 102-106 and 108-110 are rejected under 35 USC § 102(b) as lacking novelty over Horai Jr. '683. Claim 95 is not included in this rejection, and the independent claims 93 and 108 have been amended to include the recitations of that claim. Therefore, the instant rejection is overcome.

Rejection under 35 USC § 103

Claims 95-98 and 107 are rejected under 35 USC § 103(a) as being unpatentable over Horai Jr. '683 in view of Beschke '633. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

Applicants submit that the Examiner fails to establish *prima facie* obviousness of the claimed invention.

The Examiner's position is essentially that Horai Jr. teaches all of the features of the invention except the specific ratios of silicate to copper recited. Beschke is cited for the proposition that the particular ratio of silicate to copper can be adjusted at will, and the Examiner then asserts the doctrine that merely adjusting a "known result effective parameter" is obvious. The Examiner also asserts that the crystal structure of the compositions is inherent in the ratios of silicate to copper contained; that is, the crystal structure is a necessary result of the ratio of silicate to copper in the composition.

Applicants disagree. The present claims recite five particular values of the ratio of silicate to copper that are shown in the specification to be optimally effective in antimicrobial activity, and that there are no "blazemarks" or other guidance whatsoever provided by Beschke toward those particularized values. Accordingly, Beschke does not render the present claims obvious. *See, e.g., In re Baird*, 29 USPQ2d 1550 (Fed. Cir. 1994).

Furthermore, the Examiner improperly relies upon the doctrine of inherency to assert obviousness. In particular, the Examiner asserts that the compositions of the present invention would necessarily have a crystalline structure providing the X-ray diffraction patterns recited in the claims, citing as evidence Applicants' own disclosure.

First, the evidence that the cupric silicates are crystalline comes from Applicants' own disclosure. These results are not prior art to the invention and the Examiner is not entitled to rely upon them as if they were prior art. It is the Applicants' finding the particular cupric

silicates are crystalline in structure and that such crystalline cupric silicates are effective as antimicrobial compositions.

Second, some of the rejected claims, and in particular now amended claim 93, do not recite anything about the particular X-ray diffraction pattern or anything about the method of making of the cupric silicates included in the composition. For example, claim 93 recites only that the composition includes a crystalline cupric silicate.

The Examiner's assertion of inherency improperly suggests that a crystalline structure is a necessary result of combining the silica and copper in the recited proportions. However, the Examiner has not provided any evidence that this is so. For instance, the specification describes that the crystalline cupric silicates of the presently-claimed compositions are made from a solution having a pH less than 6. The Examiner provides no evidence that a crystalline cupric silicate is produced by combining silicate and copper in the proportion recited in claim 93 in a solution of pH above, for example pH 8.

Finally, the criticality of the ranges of the cupric ion and silicate recited in claim 93 is demonstrated by the results shown in the specification in Table 1 and in Table 4. The data in Table 1, on page 66 of the present specification, clearly show that the cupric silicates having a silica to copper ratio 1:5.15, 1:0.78, 1:0.53 and 1:0.34 show better bacterial decontamination when compared with other cupric silicates having copper to silica ratios such as 1:1 or 1:0.8. Furthermore, Table 4 on page 69 of the specification shows that cupric silicate having silica to copper ratio 1:5.15 demonstrates superior bactericidal property when compared with cupric silica having silica to copper ratio 1:1. Hence, the examples in Table 1 and Table 4 demonstrate the criticality of the particular ratios of silicate to copper recited in the present claims.

For all of the above reasons, Applicants submit that the invention as presently claimed is not obvious over Horai Jr '683 read with Beschke '633, and so the instant rejection should be withdrawn.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mark J. Nuell, Ph.D., Reg. No. 36,623, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By Mark J. Nuell
Mark J. Nuell, Ph.D.
Registration No.: 36,623
BIRCH, STEWART, KOLASCH & BIRCH, LLP
12770 High Bluff Drive, Suite 260
San Diego, California 92130
(858) 792-8855
Attorney for Applicant